Review of a TIS

- Ensure project has been logged in and all background information has been obtained. A checklist for the proper log-in procedure can be found in the *SC Log-in* section. If some information is missing, acquire it before you begin your review.
- Review correspondences from the Regional Traffic Engineer, Division Traffic Engineer, and/or District Engineer to see if there is any pertinent information about the area. If these persons have not been contacted, e-mail the District Engineer and 'cc' the Regional Traffic Engineer and the Division Traffic Engineer as explained in the *Initial Contact* section.
- Read the submitted TIS. As the initial read of the TIS is performed, it should be checked to make sure that it contains the necessary details as is explicitly expressed in *Chapter 5*, of the new driveway manual.
- Familiarize yourself with the development, any approved development, the local roadway network, and any TIP/Local projects in the area. Tabbing the report is highly recommended for future retrieval of information.
- As the TIS is read, the accompanying site plan should be laid out to provide a visual reference to the TIS text. The site plan should be reviewed to make sure that it complies with the requirements detailed in *Chapters 5* of the new driveway manual.

➢ **At this point, if it is discovered that technical errors exist and/or portions of the TIS are not included, per details listed in the driveway manual, a list of these errors and/or issues should be made. This list should be divided into the following categories:**
  - ✓ Technical: This includes items that do not appropriately follow specified guidelines for any type of analysis (trip generation, operational analysis, software inputs, etc.).
  - ✓ Conceptual: This includes items that, based on basic traffic engineering concepts, raises some concern such as stating *'…level-of-service 'F' is acceptable...'*

➢ **After the list is compiled, the staff member reviewing the TIS should arrange a meeting with the Access Management Engineer to discuss it.**

♦ **However, if the TIS is basically error-free and contains all necessary details, the staff member should continue with the review.**

- Note the proposed land use(s), the development's size, and its transportation layout (i.e., the number and location of driveways with respect to transportation network).
  - ✓ *Do the proposed land use(s) in the TIS match those shown on the site plan or vice-versa?*
  - ✓ *For studies that use LUC 820 (Shopping Center), are additional land use codes assigned to the outparcels? Outparcel square footage should not be combined with the Shopping Center square footage.*
  - ✓ **If there are differences between the site plan and the TIS, the staff member should make a list of these differences and arrange a meeting with the Access Management Engineer to discuss these differences.**

- ❑ Use the Trip Generation Software and/or manuals to verify the trip generation calculation.
  - ✓ *Is (Are) the proposed land use(s) provided?*
  - ✓ *Is (Are) the proposed land use(s) evaluated appropriately, i.e., 'business park' land use applied to a mixed-use development or an office development?*
  - ✓ *Is (Are) the proposed land use(s) evaluated using the appropriate independent variable, i.e. bank evaluated based on the number of teller AND ATM windows or on square footage?*
  - ✓ *Is (Are) the size of the proposed land use(s) within the data range in the Trip Generation Manual?*
  - ✓ *Is the trip generation for approved development provided?*
- ❑ Verify the methodology and calculation of the internal capture rate and/or pass-by trip reductions, if they are included or applicable.
  - ✓ *Is (Are) the reduction(s) appropriate? Too high? Not correctly applied? Not explained?*
  - ✓ *Is internal capture applied to retail-to-retail trips?*
  - ✓ *Are volumes in internal capture diagram entered appropriately?*
- ❑ Verify the trip distribution for the development.
  - ✓ *Does it make sense? Is the methodology explained?*
  - ✓ *Does the sum of all inbound/outbound percentages equate to approximately 100%?*
- ❑ Check figure for existing traffic volumes and conditions.
  - ✓ *Are the speed limits, AADT, and laneage correctly recorded?*
  - ✓ *Contact the District Engineer for confirmation if there are any differences.*
- ❑ Verify the accuracy of the traffic counts.
  - ✓ *Are the traffic counts older than one year?*
  - ✓ *Were the counts performed on a Tuesday, Wednesday, or Thursday?*
  - ✓ *Were the counts performed during the Christmas Season or in the summer near a school or vacation area.*
- ❑ Verify all traffic volume diagrams. (See Appendix)
  - ✓ *Are all scenarios (per the new driveway manual, Chapter 5) provided?*
  - ✓ *Do traffic volumes between intersections balance? If over a 10% margin , then you must balance the traffic.*
  - ✓ *Does the distribution of site-generated traffic volumes follow the stated trip distribution?*
  - ✓ *Do typographical errors exist?*
  - ✓ *Does the growth rate seem appropriate?*
  - ✓ *Are the traffic volume diagrams easy to follow?*
  - ✓ *Are roadway names labeled and correct?*
  - ✓ *If there are any differences/problems with the traffic volumes, are they explained?*
  - ✓ *Are the volumes added or subtracted appropriately?*
  - ✓ *If the development is on a TIP Project, is there an analysis for the design year of the TIP Project?*
- ❑ For the transportation analysis, verify that all scenarios (as listed in the new driveway manual, *Chapter 6*) are evaluated for both the AM and PM peak hours. The analyses should be included in the TIS appendix(ces) or as an email attachment or as a separate addendum.

- ✓ *If only one peak hour (AM or PM) is evaluated, does the TIS provide an explanation?*
- ✓ *If a Saturday scenario is included, does the TIS provide an explanation?*
- ✓ *If a Control of Access (C/A) break or median break is proposed, does the TIS provide alternatives in the event the break is denied?*

- ❑ Is the appropriate software used in all the transportation analyses?
  - ✓ *For traffic signals, is Synchro used?*
  - ✓ *For roundabouts, is aaSIDRA used?*
  - ✓ *For unsignalized intersections (where applicable and appropriate), is the Highway Capacity Software used?*
  - ✓ *Is the correct version of the software being used?*
- ❑ Verify that all software analysis conforms to the basics of our review guidelines.
- ❑ Review the LOS Tables.
  - ✓ *Are there any failing conditions?*
  - ✓ *Are the failing conditions handled appropriately?*

- ♦ **If the analyses do not conform to the guidelines, make a brief listing of the errors, problems, or concerns, and meet with the Access Management Engineer before proceeding with the completion of the TIS review.**

- ❑ Verify the results of the analysis(es).
  - ✓ *Do we concur with the TIS results?*
  - ✓ *Does the TIS list the results?*
- ❑ Based on traffic impacts that are attributed to the development's traffic (via referencing the analysis), are roadway improvements investigated and stated in the TIS that mitigate those impacts?
  - ✓ *If not, does the TIS explain?*
- ❑ If roadway improvements are recommended, check the TIS assignment of these improvements.
  - ✓ *To be done by the development?*
  - ✓ *To be done by a TIP Project?*
  - ✓ *To be done 'by others'?*
  - ✓ *Needed to accommodate future traffic conditions?*
  - ➢ **The latter three (3) listed above should be reviewed *VERY* carefully.**
- ❑ After the above process is completed and dependent on additional meetings or communications that take place concerning the TIS or the development in general, the staff member may need to create the transportation network in the appropriate software if errors are presents and verification is needed. See the Access Management Engineer before beginning this portion of the analysis. Utilize the "Synchro Checklist" and the "Anlaysis Guidelines" for an accurate analysis.
  - ✓ *Do we achieve the same results as the TIS?*
- ❑ According to our analyses, if additional roadway improvements are necessary to mitigate the traffic impacts or more are necessary to satisfy criteria listed in *Chapter 6* of the new driveway manual, the staff member should make them, review them, and eventually include them in the recommendations letter, if appropriate.

- Volume Balancing Appendix
  - ✓ Compare existing volumes diagram to traffic counts – are they the same?
  - ✓ Compare existing volumes to verified trip distribution – is it within 5%?
  - ✓ Check growth rate and compare to future no build volumes, add approved site traffic according to its relative distribution – are they within 5%?
  - ✓ Distribute site traffic (Primary and Pass-by) according to trip-gen and distribution – Does it match?
  - ✓ Add site traffic to background traffic and verify that it matches volume diagrams.